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Selected Actions Taken for Securing or Backfilling Physical Safety Hazards
Associated with Abandoned Mined Lands in Nevada (EA)

PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

Department of the Interior
Bureau of Land Management
Nevada State Office

August 2000

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Purpose of and Need for Action

Introduction

This Environmental Assessment analyzes the impacts of approving "typical remediations" of physical human safety hazards associated with Abandoned Mined Lands (AMLs) on public lands in Nevada. The proposed action provides a framework that allows most proposals that involve remediation of hazardous

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AMLs on Bureau of Land Management (BLM) lands in Nevada to be analyzed in one programmatic Environmental Assessment (EA). If a proposal to remediate or secure an AML conforms to the subject regulations and to the framework of this document, then BLM may allow the proposal without further detailed analysis. This EA is part of the BLM's decision making process in accordance with the National Environmental Policy Act (NEPA), the Federal Land Policy and Management Act of 1976 (FLPMA).

The Nevada Bureau of Land Management (BLM) entered into a Cooperative Agreement with the Nevada Division of Minerals (NDOM) in 1994 to establish and maintain coordination and responsibilities pertaining to the securing of mine safety hazards on BLM-managed lands in Nevada. The agreement, pursuant to Section 307 of FLPMA, authorizes NDOM to secure AML safety hazards on BLM lands in Nevada.

Twelve human fatalities and many injuries have resulted from incidents involving AML sites in Nevada since 1971. The spread of urban populations into areas where such sites are common and expanding recreational use of public lands makes such incidents increasingly likely. Of the estimated 155,000 AML sites in Nevada, about 50,000 may pose serious risks to human safety. Only about 5,500 of these have been secured by fencing or backfilling to date. While public information campaigns describing the hazards of AML sites have been conducted, the need to secure other high risk sites is immediate. The purpose of this EA is to expedite the securing of hazardous sites which do not require more specific NEPA analysis.

Applications of this document:

Categorical Exclusions:

Certain actions may fall under categorical exclusions and thus not require analysis under this EA. When no exceptions as described in Departmental Manual [516 DM 2.3A(3) & Appendix 2] apply, Installation of minor devices to protect human life,(e.g. grates across mines) do not require an EA or EIS. (Federal Register/Vol. 57 No 62/ Tuesday, March 31, 1992) FR Doc 92-6700.

DNA:

If the criteria and assumptions of this programmatic EA are met, a Demonstration of NEPA Adequacy(DNA) may be completed and a notification to proceed may be issued pursuant to this EA and the CA with NDOM.

Supplemental EAs:

If the proposed action is beyond the scope of this EA, another EA may be tiered upon this one to analyze the proposed action.

Relationship to Statutes, Regulations, or other Plans:

The proposed action is in accordance with applicable federal statutes and regulations , including the Taylor Grazing Act, the FLPMA, the Wild, Free-Roaming Horse and Burro Act, the National Historic Preservation Act, the Clean Water Act, the Wilderness Act, Congressional mandates, and Executive Orders.

Nevada Administrative Code Chapter 513 provides definitions of AML hazards and details the responsibilities of the state in inventorying, ranking, and remediating hazards.



Nevada Revised Statute NRS 41.0331 provides protection for remediators from civil liability.

Nevada BLM Manual H-8550-1 Interim Management Policy and Guidelines for Lands Under Wilderness Review stipulates requirements for public notice of actions in Wilderness Study Areas and provides policy for acceptable activities in such areas.

The Endangered Species Act describes the responsibilities of the Federal Government to listed species which may be impacted by the proposed action.

BLM Manual 3160 and the accompanying handbook H-8160-1 describe Native American consultation and coordination.

Critical Elements of the Human Environment:

The following critical elements of the human environment were considered in this EA as required by statutes, regulations, or Executive orders: (Handbook H-1790-1).

- Air Quality
- Areas of Critical Environmental Concern
- Cultural Resources
- Environmental justice
- Native American Concerns
- Noxious Weeds
- Threatened and Endangered Species
- Wilderness

The following critical elements are not relevant to the scope of this EA and are designated Negative Declarations:

- Farm Lands (Prime or Unique) - no such areas are included in the proposed action.
- Flood plains - no Flood plains are expected to be impacted by the proposed action.
- Wastes, Hazardous or Solid - Any sites which are determined to contain hazardous or solid wastes will be excluded from the scope of this EA.
- Water Quality, Drinking/Ground - Sites where surface or ground water impacts are present are specifically excluded from the scope of this EA.
- Wetlands/Riparian Zones - Sites with surface water or watershed impacts are specifically excluded from the scope of this EA.
- Wild and Scenic Rivers- No designated Wild and Scenic Rivers occur within the area covered by this EA.

Requirements for Further Environmental Analysis

This is a programmatic document for managing the remediation of safety hazards associated with Abandoned Mined Lands on public lands in Nevada. BLM field offices will perform the suitable level of site-specific NEPA analysis and documentation (including applying categorical exclusions) for all proposed remediations under the subject regulations.

If analysis finds that the remediation would significantly differ from the proposed remediations listed in the proposed action or that the proposed remediation might result in impacts not previously addressed, a site-specific EA-level analysis or environmental impact statement-level analysis may be required. This document is not intended to address remediations other than for immediate physical safety, such as those related to

CERCLA/Clean Water Act or toxic release issues.

Interrelationships

The nature of today's mining industry makes it essential for BLM to coordinate its surface management with other government agencies responsible for permitting portions of these operations. This section describes major interrelationships in the remediation of safety hazards associated with Abandoned Mined Lands on public lands.

Federal Government

The Army Corps of Engineers (Corps) evaluates potential effects of materials placed into or removed from jurisdictional wetlands or waters of the United States. The Corps may conduct a jurisdictional delineation to decide if the proposed remediation is affected by guidelines to determine compliance with Section 404 of the Clean Water Act. Activities under the subject regulations must comply with the Clean Water Act. For information on Section 404 permits contact:

U.S. Army Corp of Engineers
Regulatory Section
300 Booth
Reno, NV 89502
ph (775) 784-5304

The U.S. Fish and Wildlife Service (USFWS) administers the Endangered Species Act. If threatened or endangered species, proposed species, or designated or proposed critical habitat could be affected by the proposed action, BLM would prepare a biological assessment based on the information from the wildlife analysis, and enter into Section 7 consultation with USFWS. After the biological assessment is submitted, USFWS would prepare a biological opinion addressing project impacts and any cumulative impacts from other activities in the same area. BLM will incorporate the findings of the biological opinion in determining how the proposed remediation may occur. The proposed action could not proceed if the proposal as mitigated would jeopardize the continued existence of a listed species or result in destruction or adverse modification of critical habitat.

State Governments

Nevada has a formal mine permitting process that includes analysis of proposed reclamation. The state regulatory agencies responsible for mining-related permits or approvals are the Nevada Division of Environmental Protection (NDEP), Nevada Division of Water Resources (NDWR), Nevada Division of Minerals (NDOM), and the State Inspector of Mines (SIM). The Nevada Division of Minerals is also responsible for the identification and securing of hazardous AML sites on public lands within the state. The Nevada Division of Wildlife is responsible for issues involving animal life within the state, while the Nevada Division of Forestry regulates plant issues.

Local Governments:

County governments have review and approval authority over some aspects of remediation.



This authority may include flood control and air quality. Tribal governments have review and approval authority for flood control and air quality for any sites within reservation boundaries.

According to Executive Order 11-988, all federally funded projects or private projects on federal lands must use proper flood plain management techniques. The authority to ensure that suitable techniques are employed has been delegated to county flood control districts. Remediation activities proposed for flood plains must be reviewed by the flood district. Operations allowed will be notified in writing that the mode of operation proposed is not detrimental or incompatible with local flood control regulations.

Public Involvement

A notice of the proposed EA scoping process and public meetings was published in the Federal Register on July 12, 2000 (FR Vol 65. Doc. 00-17574). During the initial thirty day public comment period, which closed August 11, two written and two verbal (telephone) comments were received.

Two public meetings were held, on July 27, 2000 in Las Vegas, and for August 1, 2000 in Reno. These meetings were publicized in local media (newspapers and radio stations) and on the public web site of the Nevada Division of Minerals. A letter describing the proposed EA and the scoping meetings, and requesting comments from interested parties was sent on July 5, 2000 to 255 state, federal, local, tribal, industry, and environmental organizations, corporations, and individuals. . The Las Vegas meeting was attended by a representative of the Nevada Mining Association, a member of the Sierra Club, an Environmental Manager of a large Nevada mine, and state and federal agency representatives.

Issues raised included:

- The need for rapid coordination with the state on identification and documentation of historical inventories so that the process of closure was not delayed..
- The need to consider Visual Resource Management (VRM) criteria in remediation work.
- The need to coordinate with local governmental entities where appropriate, especially for actions that may impact air quality

The Reno meeting was attended by state and field office BLM employees, the Nevada Division of Minerals, industry and Nevada Mining Association representatives, representatives of the Pyramid Lake and Lovelock Paiute Tribes, the Nevada Wildlife Federation, Great Basin Mine Watch, and unaffiliated members of the public including a local photographer and a recreationist.

Among the issues raised were:

- The standards that will be imposed for site reclamation/revegetation after remediation.
- The possibility of problems with groundwater in vertical shafts or with perched water tables.
- The need to coordinate carefully with wilderness staff at state and field office levels to ensure that sites in wilderness or wilderness study areas are properly identified and appropriately remediated.
- Whether or not tribal lands are or could be included in remediation efforts.

- Whether there is or will be "Good Samaritan" language to protect volunteers from subsequent liability associated with their remediation work.
- Whether there would be a provision for overriding the requirements for biological and cultural surveys for sites which present an imminent danger to the public.
- Whether there will be a "time clock" after a site is identified to ensure that remediation occurs quickly.

A written comment stressed the need for multi-season bat inventories.

Written comments from the Nevada Division of Minerals are reproduced in Appendix 8 and summarized here:

The EA should focus on reducing paperwork and accelerating the "approval to secure" process while not attempting to secure all sites to the point that they are completely hazard-free. High-hazard sites should be quickly approved. The relative merits of methods of securing AMLs should be discussed. The Division of Minerals preferred alternative is immediate fencing followed by backfilling on a case by case basis. Only orphaned sites should be considered.

Two verbal (phone comments) were concerned with potential negative impact to mining industry and cost to industry, and the restriction of access to potential evidence of mineralization.

Issues Identified and Selected for Analysis

After public and internal scoping, the following issues were identified and selected for detailed analysis.

Biological Issues:

- **Wildlife.** Sites which are to be backfilled may contain wildlife other than listed species and bats. These should be inventoried and the data obtained made available to state agencies.
- **Threatened and Endangered Species Protection and Recovery.** Continued protection is needed for Desert Tortoises and other threatened and endangered species or BLM listed sensitive species that could be impacted by the securing of hazardous AML sites.
- **Bats and other species of concern.** Neither Nevada or California has any bats on the Federal list of threatened and endangered species. However, bats are known to use suitable abandoned mine lands for a variety of habitat purposes. One bat species is protected by the state of Nevada, and 12 species occur on the BLM Nevada Sensitive Species List. BLM policy is to provide these species with the same level of protection as is provided for candidate species in BLM Manual 6840.06 C. (See Appendix 1).
- **Reclamation and revegetation:** Standards or guidelines for post-remediation reclamation must simultaneously result in a productive post-remediation land use while not discouraging volunteers from performing because of cost, difficulty, or liability of reclamation.

Administrative Issues:

- The BLM is cooperating with the state of Nevada Division of Minerals in identifying,



prioritizing, and securing hazardous AMLs. Other administrative issues include ensuring that the process of surveying and securing AMLs is done in accordance with Federal and State safety regulations.

- There is a need to expedite the process of performing need surveys and inventories and obtaining permission to remediate.
- The possibility and desirability of including provisions for administrative exceptions to the need for cultural, historic and biological surveys and inventories should be considered for sites which pose an imminent threat to public safety.

Native American Issues:

- It is desirable to offer tribal entities the opportunity to participate in the process of identifying and remediating hazards on tribal lands as well as lands managed by the BLM..
- It is essential to ensure that disturbances associated with remediation to not impact areas of cultural or religious importance to Native American groups.

Cultural Issues:

- There may be concerns about negative impacts to cultural and historic features both within mines that are secured (especially those that are backfilled), and features which may be adjacent to AML sites that could be impacted by either fencing or the removal of material for backfilling.
- Visual integrity of historic and/or scenic values should not be compromised by remediation.

Social and Economic Issues:

- **Liability:** There is a need to protect volunteers from liability associated with actions taken in good faith during the course of remediation.
- **Recreation:** Abandoned mines are sometimes used by recreational explorers. Access routes such as trails or roads may be altered by remediation efforts. Special Management Recreation areas may have separate planning efforts which would require that remediation may need to be incorporated in that plan.
- **Wilderness and Wilderness Study Areas:** There are issues related to the special requirements for work methods, visual resource management, and post-remediation reclamation/revegetation in wilderness areas.
- **Mineral Resources:** The securing of AML sites, especially by backfilling, may prevent access to mineral and other geologic information useful for the exploration of potential mineral resources.
- **Air quality:** Activities beyond simple fence construction may impact air quality resources.

Issues not Selected for Detailed Analysis:

Several issues identified during the scoping process which were not selected for detailed analysis either because we expect there to be no significant impacts as a result of this proposed action, or because the issues were unrelated to the proposed action.

Issues unrelated to the proposed action include:



Water Issues: This EA is not intended to address any sites which may have potential impact on surface or ground water. This will include sites which are identified as having intersected ground water or perched water tables.

Hazardous Material (HAZMAT) Issues: This EA will not address any sites which have the potential to involve hazardous materials issues.

Issues which are not expected to be impacted by the proposed action include:

Economic Impacts to the mining industry: Because the remediation work addresses only abandoned sites and is either done on a voluntary basis or through funds already established by state and federal agencies, it is unlikely that it will impose any direct additional financial burden upon the mining industry.

Wildlife: No actions taken will jeopardize the continued existence of wildlife.

Related Actions and Activities:

Interagency Abandoned Mine Land Environmental Task Force:

In March of 1999 the Bureau of Land Management - Nevada State Office (BLM) initiated the formation of an Interagency Abandoned Mine Land Environmental Task Force (IAMLET) to begin remediation of abandoned mine land (AML) environmental problems associated with watersheds in Nevada. The task force is comprised of federal and state agencies with a role in abandoned mine lands in the state. Initial funding for the program is from the BLM through the Soil, Water, and Air Management Budget, in accordance with the Clean Water Action Plan. Technical expertise and project management assistance will be provided by the cooperating agencies. .

The task force has recommended 33 sites for budget consideration in the near future. The task force intends to seek additional nominations from other stakeholders and solicit additional funding from other sources.

Inventories of Abandoned Mined Lands on Tribal lands:

In 1995, the B.M., in cooperation with the Nevada Bureau of Mines and Geology, compiled an inventory of Abandoned Mined Land sites on the Pyramid Lake Paiute Reservation. This service is now being offered to the Walker Lake Reservation and other tribal entities as time and finances permit.

Alternative One: The Proposed Action (PA)

The proposed action is approving AML remediation proposals that meet either of the two "typical remediations". The framework of this document consists of the proposed occupancies and associated performance measures that remediators can use for their specific proposals. The performance measures associated with the PA do not constitute a separate regulatory proposal but are merely intended to assist BLM staff with the implementation of the remediation efforts. These performance measures have been developed to lessen or prevent (mitigate) environmental impacts caused by the proposed remediations. The following two proposed



remediations would be used to evaluate the securing or closing of hazardous AML sites as prescribed in NAC 513. .

1. Placing on public lands fences, gates, or signs designed to limit public access.
2. Backfilling of adits, shafts, or other mine-related excavations to eliminate potential hazards and limit public access.

The following are common elements of the two proposed remediation methods:

- AMLs are determined to be inactive, unclaimed, and to have no associated potentially responsible party (PRP).
- Remediations operations are conducted on lands within Nevada where BLM administers both the surface and mineral estates.
- Operations are conducted in accordance with BLM Nevada's approved land use plans.

Excluded from the proposed remediations are the following:

- Sites which are determined to be actively claimed or for which potentially responsible parties exist and can be located.
- Sites which have the potential to impact surface or groundwater.
- Sites which include toxic or hazardous material issues, except those which contain explosives with which NDOM is authorized to deal with under their Cooperative Agreement with the BLM (Appendix 7).

Alternative Two: No Change in Current Program (No Action)

The No Action Alternative assumes an undisturbed environment where proposed remediation of Abandoned Mined Lands would continue to occur on public lands administered by the BLM at the present rate and under the current approval process. The No Action Alternative conflicts with the Federal Land Policy and Management Act (FLPMA) of 1976 and Nevada Administrative Code 513.

Information and Processing Procedures Under the Proposed Action

This and the following section present the information and procedures that BLM would use to process requests for permission to remediate abandoned mined lands proposed action in cooperation with State of Nevada agencies. BLM will follow the same procedures under BLM guidelines if actions are taken solely by the BLM. BLM would use the following information and procedures to determine if the proposed remediation can be authorized under the subject regulations and, if the proposed remediation is authorized, what performance measures must be applied to prevent unnecessary or undue degradation.

Site ranking:

The Nevada Division of Minerals conducts a ranking of the potential safety hazards associated with reported sites as required by NAC 513..

Determination of site ownership and responsibility:



Under Cooperative Agreement No. 1422F950A50010, (Appendix 7) the Nevada Division of Minerals agrees to conduct claim research on abandoned mine sites. If a landowner or mining claimant is identified, the Division notifies them of their responsibility to secure the hazard and simultaneously notifies the county. If securing is not accomplished within the time frame established by regulation, the Division notifies the county that enforcement action is necessary. If no landowner or claimant exists, the site is declared an "orphan" and the Division secures the site or arranges for the work to be done. BLM activities will be limited to sites which are on or directly impact BLM - managed public lands.

Archeological Surveys for temporary closures by fencing.

When temporary fences are installed to limit public access to hazardous sites, the fence location will be inspected by BLM cultural resources staff or Designated Archeological Technicians (DAT), and the fence moved, if necessary, to avoid effects on cultural resources.

The State Historic Preservation Officer (SHPO) will be informed of all such closures. Notification will include a description of the hazard, a map showing the location of the fence in relation to cultural resources, and a brief description of the cultural resources involved.

Archeological surveys, including areas from which fill will be taken or which will be disturbed by backfilling, or gating.

Permanent closure of abandoned mines over 50 years old, identified on a BLM list of proposed closures for a given fiscal year, can be done without prior BLM/SHPO consultation if:

- a. A professional historical archaeologist prepares a resource assessment of (1) the individual mine site(s) targeted for permanent closure; or (2) of the mining district (if the sites are located in a historical mining district). The assessment must record the shafts/adits to be closed and define the historical attributes of these shafts/adits. If the sites are determined to be historically significant, items b through f must be done:
- b. The historical archaeologist takes 5 x 7-inch black and white photographs of the shafts/adits before and after closure. The pictures must sufficiently illustrate the construction/engineering features of each shaft/adit, artifact concentrations, as well as an overview depicting its setting within the landscape.
- c. The historical archaeologist surface maps each shaft/adit on a 7.5' USGS topographic map, as well as all areas from which fill has been gathered.. An archival copy of the resource assessment, photographs, and maps must be provided to the appropriate BLM Field Office within 60 days of finishing the project. The BLM will provide the report to the Nevada SHPO on an annual basis.
- d. A professional historical archaeologist monitors placement of fill into each shaft/adit to ensure that significant historical archaeological features are not damaged by the activities. The archaeologist will file a final monitoring report with the BLM and SHPO that outlines field procedures employed to ensure compliance with this item.
- e. A professional historical archaeologist ensures that fill, if taken from off site, is not part of another archaeological/historic site. The archaeologist will file a final monitoring report with BLM and SHPO that outlines field procedures employed to ensure compliance with this item.



f. The landscape is restored to BLM Visual Resource Management Class II standards (i.e. substantially unnoticeable within the historic landscape).

Wildlife, especially bat and desert tortoise, surveys:

BLM Nevada Instruction Memorandum No. NV-98-013 requires that Nevada Special Status Species, including sensitive species designated by the BLM State Director, in cooperation with the State of Nevada and Nevada State Protected Species be accorded the same level of protection and consideration as is provided for Federal candidate species. This consideration is to "ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened and endangered". That policy applies to all species contained in the Sensitive Species List (Appendix 1). This list includes a number of bats known to use abandoned mine habitat as well as the desert tortoise (*Gopherus agassizii*). BLM Instruction Memorandum 93-304 requires that "... all abandoned mines on the BLM-administered lands, prior to their closure, will be evaluated/investigated to determine if they are of value to sensitive wildlife, especially bats. BLM has also entered into a Memorandum of Understanding with Bat Conservation International Inc. to survey abandoned mines for bats prior to closure. (Appendix 2). Sites for which closure activities other than simple fencing are proposed must be surveyed by qualified professionals for the presence of these species before closure. This will typically involve detailed surveys made at appropriate times of year, ideally during all four seasons. All surveys will be conducted in accordance with BLM policy which permits only appropriately trained and equipped personnel to conduct underground activities. In general, surveys will be conducted externally and no underground surveys will be done except in sites with a high probability of having significant use by hibernating bats. Wildlife other than bats which is documented will be recorded and the information made available to interested agencies upon request..

Where bat use is identified, closure more restrictive than fencing will be designed and built in such ways to exclude people while allowing free passage of bats. Several such designs are included in appendix 3.

Wilderness/WSA status areas:

The BLM's 'Interim Management Policy For Lands Under Wilderness Review' (H-8550-1) states in Chapter I, B.2.b.(4) that the wilderness nonimpairment criteria will not apply with regard to "Uses and facilities that clearly protect or enhance the land's wilderness values or that are the minimum necessary for public health and safety in the use and enjoyment of the wilderness values. Protection of visitors to such areas from the dangers of hazardous AML sites is an action which is in the interest of public health and safety.

Due to the level of interest in the management of lands under wilderness review, the Secretary is committed to ensuring that all affected and interested publics are fully informed of any proposed actions and unauthorized activities occurring on BLM public lands. The Interim Management Policy (IMP) states, "All offices must notify interested parties of proposed actions on land within their jurisdiction that are managed under the IMP before such actions can be approved (emphasis added)." Procedures for doing so are identified in the Nevada BLM's Instruction Memorandum No. NV-98-010, dated January 16, 1998.

VRM Rating of the area:



The BLM field offices shall confirm the Visual Resource Management designation of the areas proposed for remediation and such activities will be conducted in a way that does not degrade the VRM designation. This may involve earthwork and revegetation.

Vegetation survey of the area to develop an appropriate seed mix for revegetation of surface disturbance associated with remediation:

Sites where securing will involve disturbance beyond simple fencing will be surveyed for vegetation types before work ensues in order to develop an appropriate post-disturbance revegetation plan and species mix. Where cactus or yucca species occur, they shall be removed prior to disturbance and, if possible, replaced after remediation.

Development of Performance Measures.

All performance measures are developed to eliminate unnecessary or undue impacts to the resource base. These standards were developed from the following management principles:

- BLM will strive wherever possible to minimize the area and extent of surface disturbance.
- Fencing will be constructed and warning signs posted in accordance with BLM and State of Nevada guidelines (Appendix 6) and applicable wilderness/wilderness study area stipulations.
- Sites of construction and sources of fill material will be located, where possible, in areas which are determined to be free of significant archeological, cultural, and biological resources.
- All remediations will be free of debris after construction and must provide a safe environment for mine employees and other public land users. All operations must strictly adhere to all applicable Occupational Safety and Health Administration (OSHA), Mine Safety and Health Administration (MSHA) regulations, and the Nevada Mining Code administered by the State Inspector of Mines (SIM).
- In general, entry into abandoned underground mine workings by BLM employees is prohibited. Entry may be allowed in certain specific cases to implement the procedures of this document but only with adherence to strict safety procedures and approval by the BLM Field Manager. BLM is developing national AML underground safety requirements which will be incorporated into this process.
- BLM would try to keep the public lands open to public entry but may restrict or close access to mines to ensure public safety and site security.
- All significant disturbances will be reclaimed according to the BLM Solid Mineral Reclamation Handbook (H-3042-1), including revegetation according to the Nevada Guidelines for successful revegetation.
- Sites which are candidates for backfilling or other secure closure will be surveyed for the presence of bats and other wildlife, and if such are found, will be secured with appropriate gating (Appendix 3) to allow continued use of the habitat, rather than by complete closure or filling. In certain cases it may be desirable to take additional measures to exclude non-aerial wildlife species as well.
- Activities will be conducted in such a way that air quality is not adversely impacted.
- Where public health and safety are a primary concern or access must be limited to protect valuable resources, BLM will authorize the placing of fences, gates, and signs on public lands to limit public access. BLM may also close the lands to public entry using



the procedures specified by 43 CFR 8364.

- In Wilderness and Wilderness Study areas, visual impacts of fencing shall be reduced by the use of solid color steel "T" fence posts, preferably gray.
- All fences and gates would be built to protect livestock and wildlife. Specifications for fences and gates will be developed on a site-specific basis with information from BLM's site-specific biological investigation. Minimum requirements for fences are in BLM Manual Handbook H-1741-1, Fencing.
- BLM will require the remediator to post public directions on fences or gates showing routes to public lands around or behind the enclosed area. The Field Manager will decide the nature of the posting on a case-by-case basis. Whenever locked gates are used, BLM must be given a key or a system of double locks used.
- Reclamation of remediation sites will include removing all structures; regrading; replacing topsoil or growth medium; and establishing a diverse, effective, and permanent vegetation cover to reflect the post-mining land use.
- NRS 555.010 lists designated noxious weeds in Nevada. Where these become established on disturbances resulting from remediation activities, they will be controlled. Appendix 4 lists these species.
- Except as provided above, BLM must consult with the Nevada Historic Preservation Officer (NHPO) when potentially significant historical, archeological, or other cultural resources could be affected by proposed development. Under Section 106 of the National Historic Preservation Act, potential impacts to cultural resources within the area of potential effect must be evaluated for all proposed uses and occupancies. BLM would consult with the NHPO to develop protection or data recovery plans for cultural properties listed on or determined eligible for nomination to the National Register of Historic Places.

The Nevada Division of Wildlife (NDOW) has management authority and responsibility for all resident fish and wildlife on BLM lands in Nevada. NDOW has co-management responsibility with the United States Fish and Wildlife Service for migratory birds and species listed as threatened and endangered under the Endangered Species Act. BLM will request information from the Nevada Division of Wildlife to determine whether any special status species are known to occur in the area. The Department is recognized as an important source of information in the development of mitigation plans designed to minimize impacts to wildlife resources.

Description of the Affected Environment

This section provides a basis for assessing the impacts of the alternatives. Information is presented commensurate with the importance of impacts. Less important material is summarized or referenced. More detailed descriptions of the affected environment are presented in local land use plans, which can be inspected at BLM field offices.

Physical Setting

The area of analysis is the State of Nevada. Nevada lies almost entirely within the Basin and Range physiographic province. The Basin and Range province is generally described as having generally north-trending mountain ranges separated by alluviated valleys. Elevations range from 490 feet along the valley of the Colorado River at the southernmost part of Nevada to a high of 13,145 foot Boundary Peak located near the California-Nevada border. The climate is semi-arid with precipitation in the mountains ranging from 20-22" to less than 10" at lower



elevations. Roughly one-fourth of the precipitation falls in winter. Temperature range from over 100F in Las Vegas during the summer to -20F in Ely during the winter.

Geology and Mining

BLM conducted a statewide inventory of abandoned mine land sites in Nevada based on existing studies and historical records. This information (attachment 1) has been computerized and is available on large and small scale maps. The State Division of Minerals, Minerals Commission has inventoried hazardous, safety abandoned mine land sites. The BLM has found that when it inventories abandoned they are on the ground surveys about two to three times as many sites are found then derived from existing information and historical records. BLM is completing an on-the-ground survey in the Winnemucca field office and has not completed an on-the-ground survey in the rest of the state.

The current estimates of abandoned mine land sites in Nevada are:

165,000 Estimated AML sites

50,000 Estimated AML sites with major safety concerns (State agency source)

Public Safety: Cooperation and Remediation

Under a formal MOU with the State of Nevada, Division of Minerals, Commission on Mineral Resources BLM has been cooperating with the state to inventory and remediate AML sites with public safety problems. In 1997 BLM awarded a Health Of the Land award to the State for the effort. In the last two years the following sites have been remediated on the public lands:

1998

86 hazardous mine openings were secured by NDOM

102 hazardous mine openings were secured by claim holders on public lands

1999

77 hazardous mine openings were secured by NDOM

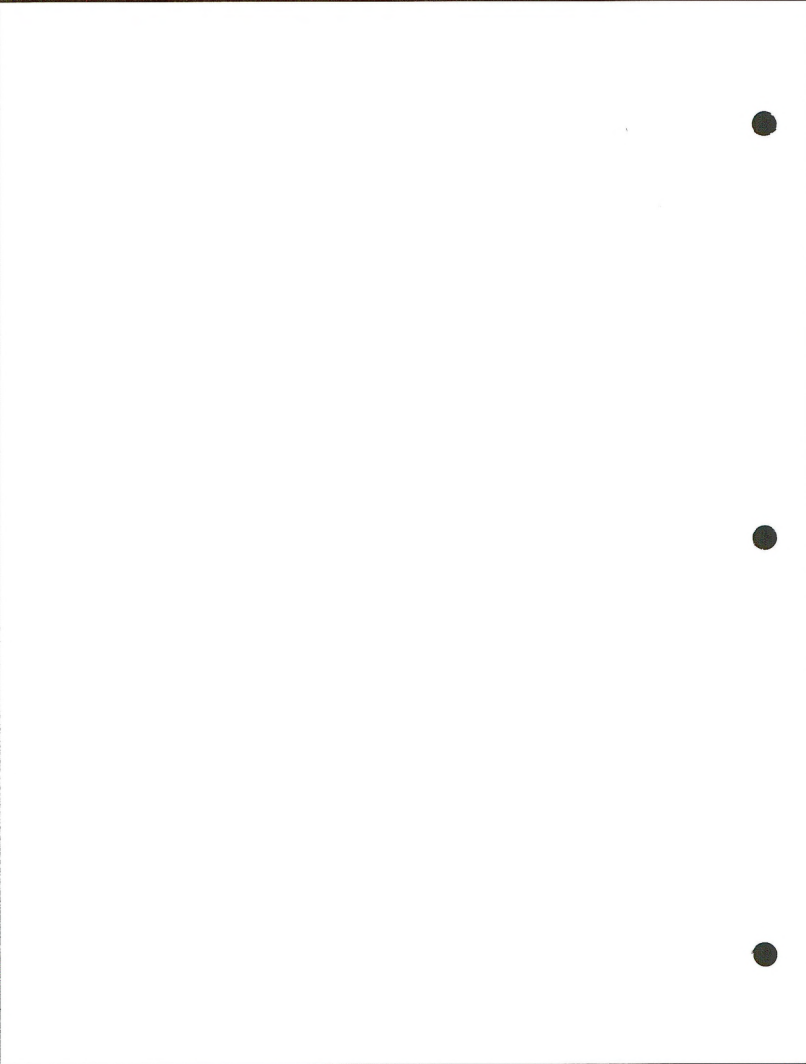
85 hazardous mine openings were secured by NDOM holders on BLM land
(also 117 securings on private lands)

37 hazardous sites secured with the Carson City urban interface areas

Soils

The soils in the area range from very shallow (less than 10") to greater than 60" in depth and are derived from a variety of parent materials. The highly diverse parent materials, topography, and climates have created soils with a wide range in major soil characteristics. Soil textures vary from sand, and sandy loam in areas of granite and sandstone parent materials to clay-dominated textures in areas of volcanic parent materials. Most soils have a high erosion potential when disturbed. At higher elevations, vegetation is the main factor in controlling erosion. At lower elevations, vegetation and desert pavement are the controlling factors.

Air Quality



Air quality varies widely by area and season across Nevada. In Clark and Washoe counties, air quality is often not in compliance with Federal and State standards, particularly with regard to PM₁₀ particulate matter. Other areas of the state are unclassified for these particulates. Dust and emissions from internal combustion engines are the primary sources of air pollution which may result from the remediation of AML hazards.

Water Resources

The EA will not address any sites which have the potential to impact either surface or groundwater quality. Therefore impacted water resources will be limited to surface runoff.

Vegetation

The region is dominated by four vegetation communities - sagebrush, desert shrub, conifer and deciduous forests, and pinyon-juniper.

The typical sagebrush community has fairly dense to open vegetation with shrubs and an understory of perennial and annual grasses and forbs. Important shrubs in the sagebrush community include big sagebrush, black sagebrush, rabbitbrushes, Mormon tea, curly leaf mountain mahogany, bitterbrush, snowberry, and horsebrush. Grasses include Sandberg bluegrass, bluebunch wheatgrass, western wheatgrass, Idaho fescue, Great Basin wildrye, junegrass, Indian ricegrass, squirreltail, muttongrass, and needle-and-thread grass.

The desert shrub community is dominated by shrubs in open stands, with a large amount of bare soil or desert pavement. Understory vegetation is often sparse at lower elevations except when seasonal precipitation produces flushes of annuals. The Mohave, Sonoran, and blackbrush communities are dominated by creosotebush, bursage, thornbush, shadscale, spiny hopsage, and greasewood. Pickleweed, seep weed, alkali weeds, glassworts, and saltgrass occur within the saline basins.

Coniferous and deciduous forests grow in the Sierra Nevada and within the mountains of the Basin and Range Province. Species dominance varies by altitude, latitude, slope, aspect or other topographical position, soil characteristics, and climatic regime. Important forest communities associated with western rangelands in Nevada include ponderosa pine, Douglas-fir, aspen, and spruce-fir.

The pinyon-juniper vegetation type grows at mid-elevations on mountain slopes. It is a cold-adapted evergreen woodland with the unequal dominance of two conifers, juniper and pinyon pine. The trees may present a closed canopy without understory vegetation, or the community may appear as an open stand of scattered trees with a diverse and well-developed understory. The associated species include Rocky Mountain juniper, Utah juniper, one-seed juniper, and pinyon pine. The associated understory of shrubs, grasses and forbs consists of a variety of vegetation from sites near woodland communities.

Vegetation Management: The BLM currently actively manages vegetation thru riparian and upland restoration, fire rehabilitation, and noxious weed control, among other programs. Federal agencies have a duty to manage undesirable plants on lands under their control under the Carson-Foley Act of 1986, Federal Noxious Weed Act of 1974, as amended (P.L. 93-629) and other laws and regulations. As of June 2000, 44 plant species are designated noxious

weeds under NRS 555.010. (Appendix 4).

Nevada has 11 plant species that are listed as threatened. (Appendix 5).

Wildlife

Nevada supports about 400 bird species, 80 mammal species, 60 reptile species, and 40 fish species. The existence of these species is due to the habitat diversity present throughout the state. These habitats range from low rainfall Chihuahuan and Sonoran deserts to moderate rainfall areas and mountainous regions. It is difficult to predict the nature, distribution, and significance of wildlife resources at this programmatic level. These resources will be assessed in BLM's local investigations of site-specific actions. Wildlife management (hunting seasons, trapping, fishing) is the responsibility of the Nevada Division of Wildlife (NDOW).

Species likely to use Abandoned Mined Lands as habitat include various mammals, reptiles, birds, and invertebrates.

Nevada has 40 animal species listed as threatened or endangered. (Appendix 5).

Wild Horses and Burros

BLM protects wild horses and burros on public lands under the Wild Free-Roaming Horse and Burro Act of 1971 (PL 92-195). As such, BLM protects these equines from capture, branding, harassment, and death, and they are to be managed where presently found (1971) as an integral part of those public lands. They are to be managed to achieve and maintain a thriving natural ecological balance on the public lands and in a coexistent state with other public land uses. An estimated 594 wild burros and 22,291 wild horses roam free on public lands within Nevada's 97 herd management areas.

Cultural Resources

BLM defines cultural resources to include both properties and traditional lifeway values. Properties consist of anything that shows evidence of having been made, used, or altered by humans. A traditional lifeway value is the quality of being useful in or important to the maintenance of a specified social or cultural group's traditional systems of religious belief, cultural practices, identity, or social interaction. A traditional lifeway value may be associated with a property or may be independent of a property or definable location.

Cultural resources in Nevada range from 11,000 year-old mammoth hunting camps of the earliest Americans to trails and forts of early explorers to historic mining, ranching, and transportation sites. Examples of prehistoric cultural resources are temporary hunting and gathering sites, villages, trails, rock art, geoglyphs, quarries, tool manufacturing areas, shrines, roasting pits, grinding stones, agricultural features, and surface scatters of artifacts. Historic sites include structures, trails, wagon roads, railroads, mines, sawmills, cairns, artifacts, and other materials associated with European exploration and settlement.

Prehistoric and historic cultural resources are found in all vegetation zones and at all elevations throughout the state. In general, prehistoric sites are denser near water and exploitable natural food sources such as pinion groves. The location of many historic sites is governed by the presence of natural resources, such as minerals that were extracted, and the



proximity of land suitable for farming and livestock grazing.

The nature, distribution, and significance of cultural resources that might be affected by remediation activities cannot be predicted with precision at the programmatic level. These resources will be identified and assessed in BLM's local investigations of site-specific actions.

Wilderness Resource Management

Lands managed by the BLM in Nevada include 112 Wilderness Study Areas totaling 5.1 million acres. All or portions of 52 of these, totaling 1.9 million acres, have been recommended for wilderness designation. All remedial actions within Wilderness and Wilderness Study Areas in Nevada shall be conducted in accordance with the Interim Management Plan.

Areas of Critical Environmental Concern

Lands managed by the BLM in Nevada include 30 Areas of Critical Environmental Concern (ACECs), totaling 1,139,267 acres. Remediation activities in these areas must conform to the management plan for the areas.

Visual Resources Management

Visual resources consist of the land, water, vegetation, animals, and other natural or human-made features visible on the public lands. Individual areas of the public lands have a variety of visual values and consequently warrant different levels of management. BLM must therefore systematically identify and evaluate the site-specific visual values and determine suitable levels of management. These visual values are identified through the visual resource management (VRM) inventory and are considered with other resources in the resource management planning (RMP) process.

BLM establishes visual management objectives in RMPs in conformance with the land use allocations made in the plan. These area-specific objectives provide the standards for planning, designing, and evaluating future management actions.

Recreation Resource Management

To enhance the quality of wilderness and outdoor recreational opportunities, BLM manages public land and water resources for their wildlife, scenic, archaeologic, and historic values. BLM's recreation program contributes to the tourist economy of Nevada and helps satisfy the growing public demand for outdoor recreation by providing opportunities on BLM-administered lands.

Economic Conditions

Mineral output in Nevada in 1999 was valued at \$2.7 billion (not including oil and geothermal), and 12,360 people are directly employed by the mining industry. Large gold mines employ most of these workers. But a sizeable population makes a living by small-scale mining on public lands. These mines play a large role in providing employment in many rural areas in the state. Businesses that supply goods and services to these small mines employ other



people. Exploration for mining is an important element in minerals production, and may rely on evidence at old mine sites.

Social Environment

Nevada has large areas with sparse populations. Many individuals are engaged in rock hunting, exploring, recreation, prospecting, and small scale mining.

Environmental Consequences

In general, under the preferred alternative, sites that receive a high hazard ranking and meet the criteria of this evaluation will be secured to reduce or eliminate hazards to human safety.

In cases where the site is secured by simple fencing, there will not be any impact to the resource base. Backfilling or gating of sites has the potential to impact some plant and animal species. In these cases, mitigation will be done to minimize this potential impact.

The environmental consequences of the proposed action and the no action alternative are analyzed in the following pages.

Impacts on Climate and Air Quality:

The main sources of air pollutants resulting from remediation activities are gases from combustion, particularly vehicle emissions, and fugitive dust generated by unpaved roads and earthworks. The impacts of the proposed action will be the same in each of the physiographic provinces of Nevada but permitted pollutant levels may vary by region and/or county.

Under the no action alternative there will not be any impacts to climate and air quality. Where remediation is done, impacts to climate and air quality could include the generation of dust and gaseous pollutants. Because surface disturbance is expected to be limited to small areas and because most sites are accessible by existing roads, impacts of remediation will be minimal. The short term nature of remediation work will preclude significant impacts from pollution.

Sites adjacent to population concentrations receive higher risk rankings. Many of these are expected to be in Clark and Washoe counties, which are non-attainment areas for PM₁₀ air quality. Remediation activities in non-attainment areas shall not contribute to exceedances of local or national air quality standards for particulate matter. This may involve mitigation in the form of water application and prompt revegetation of disturbance.

Impacts on Geology and Topography

Under the proposed action, many if not all economic mineral deposits developed on federal mining claims could be exploited. The exploitation of mineral deposits from mining claims is essential to meet mining law requirements.

Remediation activities could alter the topography of sites selected for securing. Most sites would be returned to predisturbance topographic patterns during reclamation. BLM will encourage the restoration of natural contours and topographies for all remediation efforts which alter these features.

Impacts on Soils

Under the proposed action, topsoil would be affected through erosion resulting from the removal of vegetation and incomplete recovery of topsoil from areas to be disturbed for the building and placing of structures. Reclamation would require the operator to replace topsoil removed from facilities or substitute suitable growth media, but some losses may occur. BLM would require remediators to employ the erosion prevention and control techniques listed in the BLM Reclamation Manual. All human-made slopes would be designed to prevent sheetflow from runoff, and early vegetative cover would be encouraged to stabilize soil salvage piles and newly regraded surfaces.

The impacts of a specific remediation proposal will be analyzed for local physiographic conditions. BLM will review reclamation schedules (required under the subject regulations) to ensure that they consider and preserve soils found in the physiographic province where the remediation is planned. Remediations under the proposed action must also conform to BLM land use plans and have all necessary permits before they begin. These plans and permits, being local in nature, will account for soil differences between physiographic provinces.

Under the no action alternative, there may be impacts to soils resulting from conditions at unremediated sites.

Impacts on Water Resources

In remediations involving surface disturbance, BLM would require reclamation plans that discuss in detail the proposed surface water runoff and erosion controls. Remediations under the proposed action must also conform to BLM land use plans and have all necessary permits before they begin. These plans and permits, being local in nature, will account for hydrologic differences between physiographic provinces.

Under the no action alternative, impacts to water resources could include contamination due to erosion, excessive consumption, illegal or improper retention structures and pollution in excess of permitted standards.

Impacts on Vegetation

Under the proposed action, impacts to vegetation in areas would be limited to some loss of vegetation in areas of material removal, road construction, and material placement. This would be limited to sites where remediation involves more than simple fencing. This might allow noxious weeds to invade and establish, which would change the composition of native vegetation communities. BLM would require that all such areas be reclaimed according to procedures established in planning documents and/or the BLM Solid Mineral Reclamation Handbook (H-3042-1). BLM would require that revegetation consist of a diverse mix of native perennial species supportive of the proposed post-remediation land use. BLM inspectors would inspect all such areas to ensure that disturbed areas have been revegetated to establish a diverse, effective, and permanent vegetation and that no noxious weeds had invaded. Where noxious weeds are found, appropriate control measures shall be implemented.

Under the no action alternative, there will not be any impacts to vegetation.



Impacts on Wildlife

Under the proposed action wildlife impacts would be limited to some potential loss of habitat which would be mitigated. While fences might restrict some movement of large wildlife on a very limited basis, this is expected to prevent fatalities from the same human safety hazards being remediated. There are not expected to be any losses of food resources, since areas of disturbance will be revegetated. No water sources will be impacted, since such sites are excluded from this EA. Through its inspection program, BLM would ensure that facilities and fences would not unnecessarily endanger or restrict wildlife. The nature and distribution of wildlife that might be affected by remediation cannot be predicted with precision at the programmatic level. These resources will be identified and assessed in BLM's local investigations of site-specific actions.

The impacts of a specific remediation proposal will be analyzed for local physiographic conditions. BLM will perform a site specific investigation to protect the local wildlife communities found in the physiographic province where the remediation is planned. Remediations under the proposed action must also conform to BLM land use plans and have all necessary permits before they begin. These plans and permits, being local in nature, will account for differences between physiographic provinces.

Under the no action alternative, there will not be any new impacts to wildlife. Impacts under this alternative would include continued wildlife losses due to the unremediated hazards. Habitat for threatened or endangered species could also be impacted or destroyed by human activities in unsecured sites..

Impacts on Wild Horses and Burros

Under the proposed action few impacts to wild horses and burros are projected. BLM would ensure that facilities and fences would not unnecessarily endanger or restrict wild horses or burros.

Under the no action alternative, where hazards are not remediated there could be impacts to wild horses and burros due to the presence of unremediated safety hazards.

Impacts on Cultural Resources

Under the proposed action BLM employees or other personnel permitted by the BLM will identify and evaluate all cultural resources before any surface disturbance is authorized. Any potential adverse effects of the remediation would be mitigated through the procedures described in the preceding section on archeological surveying.

Under the no action alternative, there could be impacts to cultural resources resulting from continued vandalism, theft, or alteration of unsecured sites.

Impacts on Wilderness Characteristics

Under the proposed action, there could be minor impacts to wilderness values such as naturalness and primitive unconfined recreation. Solitude would not be impacted except



during remediation activities.

Under the no action alternative, there would be no impact to wilderness values.

Impacts on Areas of Critical Environmental Concern

Remediation activities in Areas of Critical Environmental Concern will conform to the management plans for these areas. Therefore, under the proposed action, any impacts will benefit the values for which these areas are managed, by enhancing human safety and in some cases eliminating hazards to wildlife species.

Impacts on Visual Resources and Recreation

Visual values are identified through the visual resource management inventory and are considered with other resources in the resource management planning process. Under the proposed action, all proposals for remediation considered in this analysis must conform to land use plans. BLM will review each proposal to ensure that it complies with the land use plan. BLM will also work with the remediators to perform work in ways that do not detract from visual resources.

Impacts on Economic Conditions

Under the proposed action, economic impacts may result in a few cases from the loss of access to mineral information. This would be limited to those sites which are backfilled. These sites are typically very dangerous and would be unlikely to be accessed by minerals prospectors in any case.

Economic impacts from the proposed action include less time and money spent on rescues and recoveries from secured AML sites, fewer medical expenses, and a reduction in public morbidity and mortality.

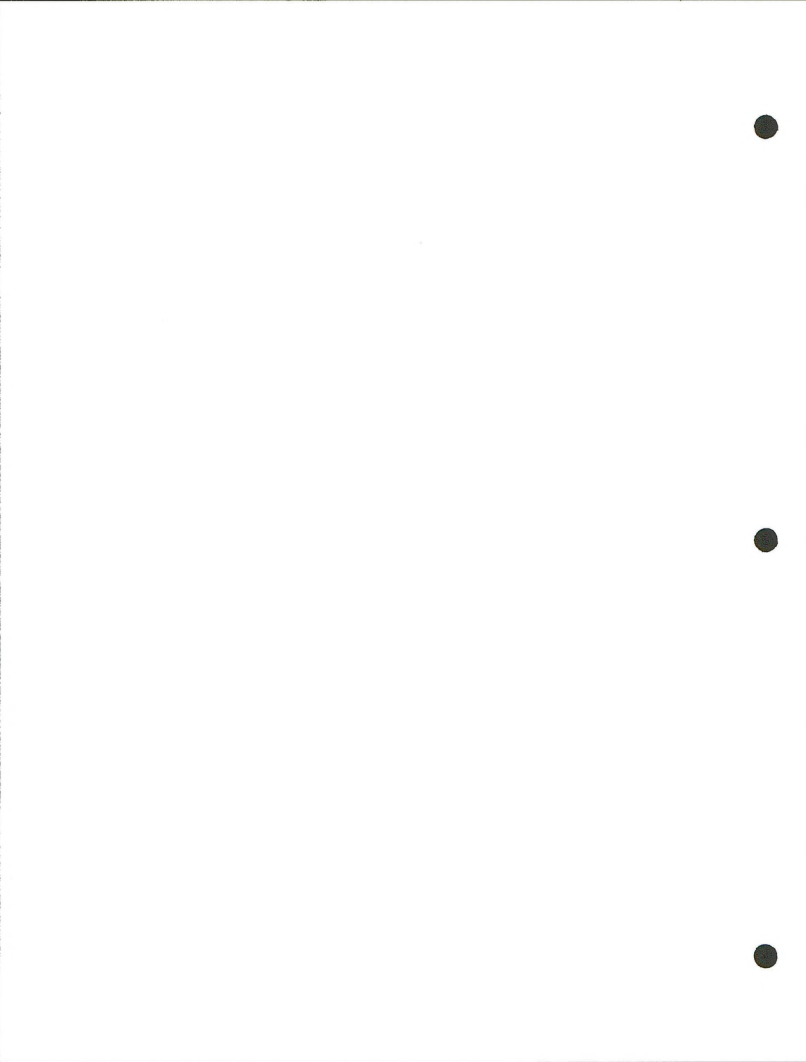
The proposed action will also benefit BLM by reducing the amount of time spent in preparing environmental assessments for remediation. Many proposals will conform to the proposed activities in the proposed action and will be analyzed as a group under this programmatic EA.

Nevada Revised Statute 41.0331 provides immunity from civil liability to persons or state agencies for damages sustained in connection with the construction of fences or other safeguards around hazardous AML sites.

Impacts on the Social Environment and Public Safety

Under the proposed action BLM will act to reduce the risk of injury or death to members of the public. Disturbance to historic, cultural, biological, and scenic resources will be minimized and mitigated. The reduction in loss of life and serious injury, as well as associated property loss is expected to be considerable.

Under the no action alternative impacts may increase due to the continued threats to human safety.



Cumulative Impacts

About 155,000 AML sites are estimated to exist in Nevada. Of these, perhaps 50,000 pose physical threats to human safety. The number of remediations to which this EA will apply is unknown.

Most remediations will involve simple fencing and the posting of signs, which is expected to result in no cumulative impact. Those AML features which have the potential to serve as wildlife habitat and which will be remediated to prevent human access will be gated rather than backfilled. If gates are properly designed and installed, the cumulative impact on potentially impacted species will be minimal. Since there will be relatively few cases of backfilling and concomitant removal of fill material, the cumulative impact of such activity is expected to be minimal. In such cases, reclamation and revegetation will mitigate such impact.

Environmental Justice:

Comments were solicited by mail and public meetings from all Native American groups in the affected area. No other minority/low income groups were identified as potentially impacted.

Agencies Consulted

Nevada Division of Environmental Protection
Nevada Division of Minerals
United States Fish and Wildlife Service

References:

Nevada BLM Special Status Species List, Instruction Memorandum No. NV-98-013, February 27, 1998
Master Memorandum of Understanding between Bat Conservation International, Inc., and the USDA Bureau of Land Management. 3/20/1993



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Selected Actions Taken for Securing or Backfilling Physical Safety Hazards
Associated with Abandoned Mined Lands in Nevada (EA)

PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

Department of the Interior
Bureau of Land Management
Nevada State Office

August 2000

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<http://www.nv.blm.gov/AMLRemediationEA.htm>

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Nevada State Office

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